

Creative Uses for Repurposed Historic Textile Mills
A Case Study of Revolution Textile Mill, Greensboro N.C

by

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Abstract

While most scholars on the subject of North Carolina industrial history agree on the reasons for its rise and subsequent devastating decline, they offer little insight to the future of the mill buildings that remain as the industry's physical legacy. Very few sources discuss viable uses for rehabilitating these structures, largely leaving this field to be determined by a market study.

This paper explores the adaptive reuse approach of a former textile mill in Greensboro, N.C. The goal is to analyze the approach taken to reactivate the Mill as a meaningful campus within the larger context of the town, with specific regard to Greensboro's textile history. The case will also explore broader themes in the field of mill redevelopment, particularly the successes and challenges of incorporating creative uses. This paper serves as one example of how to successfully consider creative uses for redevelopment of large, historic structures, and also identifies some of the major challenges to non-traditional approaches.

Ultimately, this case study is just one example of how alternative uses and redevelopment can be approached. There are many other cases that, when approached differently, may prove to be differently challenging and successful. This research draws upon first-hand research and experience, multiple interviews with key participants and leaders of the process, as well as a substantial literature consultation that places this case within a larger context of historic Mill redevelopment in North Carolina.

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Creative Uses for Repurposed Historic Mills

A Case Study of Revolution Mill, Greensboro N.C



I. Background

In countless numbers of former industrial towns across the south, there are still remnants of a once thriving production based economy. In Durham and Winston-Salem, these remnants often take the shape of abandoned tobacco warehouses and cigarette factories leftover from the days of American Tobacco and Reynolds American¹, and in Charlotte and Greensboro these structures are remnants of a formerly booming textile and cotton industry.² Since many of these facilities have sat vacant and partially demolished since at least the 1980s, they often are viewed

¹ North Carolina Business History: List of NC Textile Mills. Published 2006, accessed March 2014.

<http://www.historync.org/NCtextilespre1860.htm>

² North Carolina Business History: List of NC Textile Mills Prior to 1860. Published 2006, accessed March 2014.

<http://www.historync.org/NCtextilespre1860.htm>

as gaping holes in the downtown fabric and a major challenge to redevelopment. More recently there has been a shift in the way we view our large brick monuments, and we are beginning to think of them now as perhaps the best opportunity we will ever have to pay homage to our manufacturing history.

In North Carolina, a majority of the mill facilities are former textile and tobacco complexes and furniture factories.³ The literature has well documented the national phenomenon that became the textile and furniture industries' swift demise by way of outsourcing. Due to the similar time period and pattern of development, mainly 1860-1910, the architectural typology of mill buildings across industry in North Carolina is relatively similar and therefore rehabilitation strategies are also comparable. Not infrequently in the literature, the term "mill" is used as a reference to large, industrial-related structures no matter their original use.⁴

The major period for textile Mill development in North Carolina occurred between 1850 and 1930, with the majority of southern textile mills built in the North Carolina Piedmont. As figure 1 illustrates, in North Carolina, and possibly the entire southeast region, Charlotte and Greensboro were the predominant loci for textile mill development. In the cases of Winston-Salem and Greensboro, each city saw their population grew from fewer than 500 residents to over 10,000 between 1870 and 1900.⁵ These major cities saw the bulk of their structures

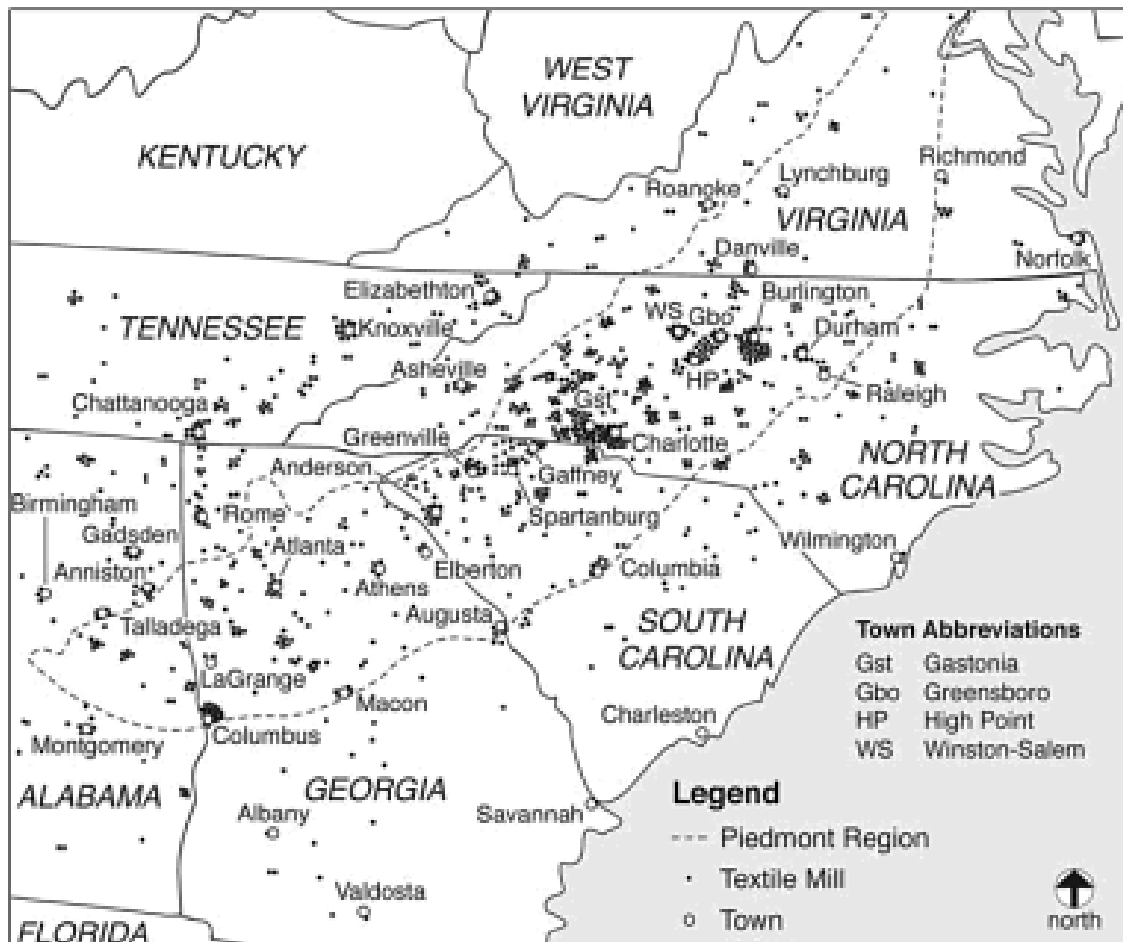
³ North Carolina Business History: List of NC Textile Mills Prior to 1860. Published 2006, accessed March 2014. <http://www.historync.org/NCtextilespre1860.htm>

⁴ Erin Morton, "THE MILLS BILL: AN ECONOMIC IMPACT STUDY OF THE NORTH CAROLINA STATE HISTORIC MILL REHABILITATION TAX CREDIT". Clemson University, May 2014

⁵ Justin M Briggs, Locational Aspects of Adaptive Reuse: The case of North Carolina's Textile Mills. East Carolina University Department of Geography. June 2010.

constructed in the fifty years between 1860 and 1930. Only a handful would still be operating in their original capacity by 1980.⁶

Figure 1: The historic spatial concentrations of Piedmont NC textile mills circa 1930



Source: Ingalls and Moore, 2001. Originally: Lemert, 1933

The textile industry's presence as a major employer and developer began to erode in the early 1970s, and the industry lost over 75% of their workforce by 2007.⁷ Timothy Minchin⁸

⁶ This inventory and time period in Charlotte has been covered in detail by Ingalls and Moore. Their inventory identified 118 textile mills built between 1880 and 1930 in the seven-county Charlotte-Mecklenburg region alone and helps to orient the major factors of textile mill development and redevelopment in the Piedmont area.

⁷ Cynthia Anderson, "The Social Consequences of Economic Restructuring in the Textile Industry: Change in a Southern Mill Village,"

⁸ Timothy J. Minchin, "It knocked this city to its knees": the closure of Pillowtex Mills in Kannapolis, North Carolina and the decline of the U.S. textile industry," *Labor History* 50, no. 3 (August 2009): 287-311.

specifically looked at the 2003 closure of Pillowtex Mills in Kannapolis, North Carolina in his poignantly titled 2009 article “It Knocked this City to Its Knees”. This mill closure was one of the largest mass layoff in the state’s history, with a loss of over 5,000 jobs between 1990 and 2005. Although the Pillowtex Mill closure is a particularly demonstrative example, this was just one part of the broader demise of the textile sector occurring across the state, the South, and the Nation.⁹ As Neil Cossons puts it: “If the rise of industrialization was dramatic in its scale and impact, we now realize that this was nothing compared with the effects of de-industrialization.”¹⁰

With the loss of traditional manufacturing jobs, some are encouraged by North Carolina’s attempt to diversify and incorporate new manufacturing industries including electronics, pharmaceuticals, some apparel, and specialized manufacturing inputs.¹¹ Although these new manufacturing industries still require large, industrial space, they do not require the same abundance of natural light and ventilation that the old mill structures provide. Instead, these industries prefer more efficient modern materials and atmosphere-controlled settings that can be provided less expensively through new construction.¹² Identifying this mismatch, many communities and developers¹³ have begun to consider alternative, non-industrial uses for repurposing North Carolina mills.

⁹ Timothy Minchin, *Empty Mills: The Fight Against Imports and the Decline of the U.S. Textile Industry*, Lanham, MD: Rowman & Littlefield Publishers, 2013.

¹⁰ Cossons, Neil. “Addressing the People and Places of Historical Industrial Landscapes”. *Forum Journal*, Spring 2011. Vol. 25 No. 3. 4.

¹¹ Phyllis Barkas Goldman, “North Carolina is one of the country’s leading manufacturing states,” *Monkeyshines on America* (August 2002): 32.

¹² Willie Drye, “Spinning New Uses for Textile Mills in U.S. South,” *National Geographic News* (June 14, 2005), http://news.nationalgeographic.com/news/2005/06/0614_050614_textilemills.html

¹³ Rebecca McCarthy, “Athens Clarke Heritage Foundation Holds Southern Mills Symposium,” *AthensPatch*, <http://athens.patch.com/groups/business-news/p/southern-mills-symposium#photo-9043204> (accessed March 13, 2014).

The North Carolina Mills Bill

In order to address the initial feasibility of redeveloping old mill buildings for new purposes, two issues must first be addressed. First, jobs were not the only thing lost with the dying of this industry: In fact, almost half of all textile structures were also lost in this recession due to demolition or neglect. In 1975, there were 1,272 mills still operating in North Carolina, but just 30 years later this number had shrunk to just 686, with most of the demolition occurring since 1990.¹⁴ Without any preservation measures put in place to protect these buildings, outright demolition or demolition by neglect would surely continue to claim the remaining structures. The second hurdle to mill redevelopment was the need for development of a financial mechanism needed that would increase feasibility and incentivize developers to redevelop these buildings.¹⁵ Building new construction on suburban green fields was much less expensive than redeveloping these mill complexes. Additionally, these sites tend to be big and complex investments, with potentially nightmarish maintenance costs and the specter of toxic residues or other regulatory issues.¹⁶

In an attempt to address these issues, in 2006 the NC General Assembly passed a bill that provided a substantial tax credit for qualified redevelopment expenses incurred in redeveloping an historic mill building. This was the first state-level program that was developed to address Mill redevelopment specifically, and the program was set up to mimic the already in place

¹⁴ Justin M Briggs, *Locational Aspects of Adaptive Reuse: The case of North Carolina's Textile Mills*. East Carolina University Department of Geography. June 2010.

¹⁵ Erin Morton, *The Mills Bill*; and Andrew Stewart, "North Carolina Tax Credit for Revitalization of Historic Mill Facilities: Other States' Legislation; Legislative Process; Parameters and Rationale; and Cost and Revenue Projection," Master's project, University of North Carolina at Chapel Hill, 2005.

¹⁶ Cossons, Neil. "Addressing the People and Places of Historical Industrial Landscapes". *Forum Journal*, Spring 2011. Vol. 25 No. 3.

Federal mill rehabilitation tax credit program.¹⁷ Although the Federal mill tax credit had already been established and set at 20% rate, the NC tax credit program served as a piggy-back credit for those properties that qualified for the Federal program and made State tax credits available for the rehabilitation of both income and non-income-producing historic mill properties. This state legislation provided that developers could receive up to 40% of qualified expenses in the form of tax credits.¹⁸¹⁹ In turn, these credits can go through a syndication process wherein large corporate investors can receive the tax credits in exchange for an equity investment in the project that the developer requires.

This legislation was truly game changing for North Carolina's industrial legacy structures as it generated much more potential investment financing for rehabilitation projects and created an economic development structure that favored rehabilitation over demolition for the first time in history.²⁰ The economic benefits of this and other historic redevelopment tax credits have been profound and far-reaching across the state of North Carolina, and more recent research has begun to explore the overall effectiveness of this legislature.²¹

The economic impact of Mill rehabilitation for a community and the state is best quantified and analyzed in a recent publication by Erin Morton. Her thesis looks at the mill rehabilitation tax credit program in North Carolina and analyzes the extent to which the mills

¹⁷ Mark Stanford "NC Mill Tax Credit" paper. April 2008. Preservation North Carolina. Accessed March 2014.

¹⁸ More populated, urban counties are considered "Tier 3" counties, and qualify for a state tax credit of 30%, while the rural and often economically depressed counties are designated as "Tier 2" or "Tier 1", and qualify for the full 40% credit

¹⁹ NC General Statute GS105-129.70 through 75

²⁰ Mark Stanford "NC Mill Tax Credit" paper. April 2008. Preservation North Carolina. Accessed March 2014.

²¹ Erin Morton, "THE MILLS BILL: AN ECONOMIC IMPACT STUDY OF THE NORTH CAROLINA STATE HISTORIC MILL REHABILITATION TAX CREDIT". Clemson University, May 2014; and Rebecca Holton, "A Profitable Past, A Priceless Future: The Economic Impact of North Carolina's Historic Tax Credit," Master's thesis, University of North Carolina at Chapel Hill, 2008.

credit has affected redevelopment feasibility and economic benefit for the State.²²²³ Her research in sum indicates that the historic mill rehabilitation tax credit has been incredibly successful in achieving its primary goal of saving endangered mills and promoting mill redevelopment as a form of economic development.²⁴ More specifically, her data shows that since its inception, the mill credit program has spurred the complete redevelopment of 24 mills, and 27 more are currently underway or waiting to be approved. Since it is estimated that only about 200 mill structures remain intact statewide, the fact that this tax credit has promoted the rehabilitation of 51 mill buildings indicates that the program has a high impact.²⁵

Included below are maps generated in Morton's report that show the numbers and geographic distribution of completed mill redevelopment projects (image one), and the numbers and geographic distribution of partially complete or proposed mill redevelopments. These maps demonstrate the significant concentration of mill tax credit projects in the piedmont region.

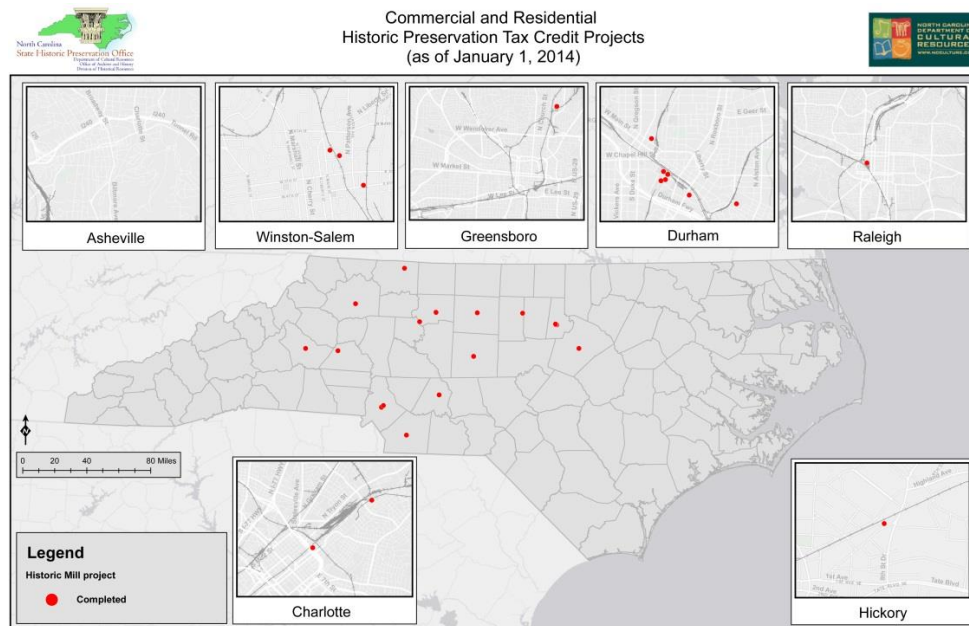
²² Erin Morton, "THE MILLS BILL: AN ECONOMIC IMPACT STUDY OF THE NORTH CAROLINA STATE HISTORIC MILL REHABILITATION TAX CREDIT". Clemson University, May 2014.

²³ Erin Morton thesis, "The Mills Bill" attempts to measure economic impact of qualified rehabilitation expenditures on historic mills in North Carolina since 2006. Economic impact is measures in a cost-benefit analysis of qualified rehabilitation expenditures, total rehabilitation expenditures, eligible mill tax credit amount, direct and indirect jobs created, direct and indirect income taxes generated, sales tax generated, and local property taxes generated. This thesis follows, and improves upon findings in Becky Holton's 2008 DCRP Master's Project which attempted to measure the economic impact of the mill tax credit program just two years after it was first created. Holton's project compared those findings to the initial predictions in Andrew Stewarts 2005 DCRP Master's Project that first proposed this legislation and made projections for its economic impact.

²⁴ Erin Morton, "The Mills Bill" 71

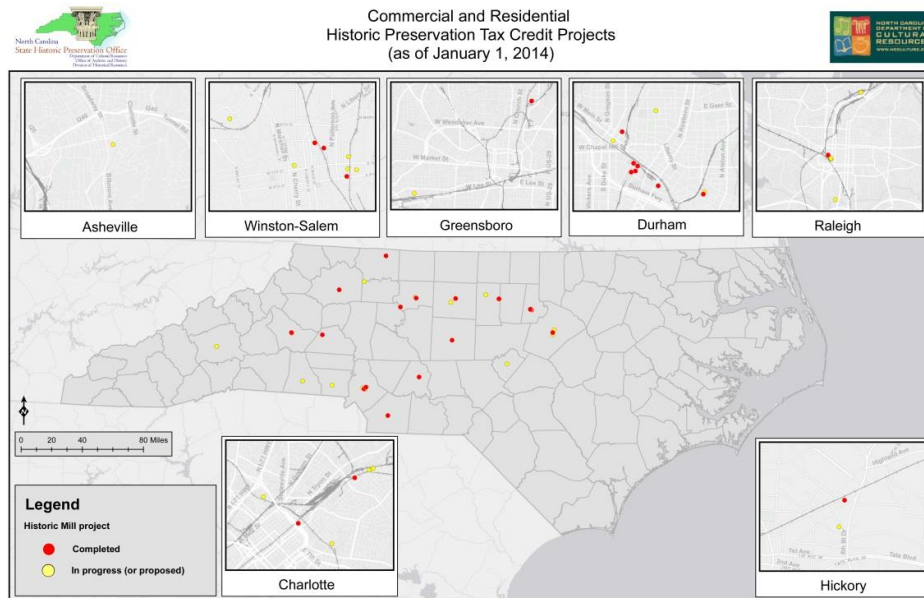
²⁵ North Carolina State Historic Preservation Office, "Mill Tax Credit Projects in North Carolina," Raleigh: Department of Cultural Resources Division of Archives and History, December 3, 2013.

Figure 2: Map of All Completed North Carolina Historic Mill Rehabilitation Tax Credit Projects²⁶



²⁶ Taken from: Erin Morton, "The Mills Bill" pg. 78. Also cited: Andrew Edmonds, "Map of all Completed North Carolina Historic Mill Rehabilitation Tax Credit Projects," North Carolina State Historic Preservation Office, February 25, 2014.

Figure 3: Map of All Completed, Ongoing, and Proposed North Carolina Historic Mill Rehabilitation Tax Credit Projects.²⁷



Morton’s study examines each of the 24 completed mill redevelopments around the state individually in order to specifically determine the local economic impact generated by the project. Thus far, mill redevelopments have occurred in 17 different North Carolina counties, and in those counties the mill credit projects were shown to generate a higher economic impact than other commercial rehabilitation projects in terms of total expenditures, direct and indirect job creation, direct and indirect income tax generated, sales tax generated, and local property taxes generated.²⁸ Her calculations also show that in the next five years the 27 additional projects that are underway or proposed will more than double the economic redevelopment activity that North Carolina would have otherwise experienced.²⁹ Although this Master’s Project does not

²⁷ Taken from: Erin Morton, “The Mills Bill” pg. 78. Also cited: *Andrew Edmonds, “Map of all Completed and Ongoing North Carolina Historic Mill Rehabilitation Tax Credit Projects,” North Carolina State Historic Preservation Office, February 25, 2014.*

²⁸ Erin Morton, “The Mills Bill”. Morton suggests that these projects create a larger economic impact than other commercial developments specifically due to their size.

²⁹ Erin Morton, “The Mills Bill” 77

extensively consider the Mill Rehabilitation tax credit, the financial implications of mill redevelopment legislation are relevant to considering mill redevelopment on the whole, and this financing mechanism has a great impact on feasibility and development of uses.

Mill Design

Mill design and layout also has an impact on development of uses. Approximately three quarters of the remaining Mills are now vacant or, at the least, not operating in their original function.³⁰ Most, if not all, have been reused at least once and have seen considerable “adaptation” to their interiors. Although this is not surprising, this observation sheds light on two important design-related considerations:

The first implication is that mill design is largely impractical in modern economies. Mills are large, and in some cases they are extremely large, and very few modern industries or uses will require such a magnitude of uninterrupted space. The American Tobacco Campus held over one million square feet of redevelopable space and, while that is one of the largest examples, it is not uncommon for mills in more urban areas to hold over 750,000 square feet of developable space. Duncan Hay references the challenging “scale” of industrial buildings.³¹ Because of their large scale, industrial buildings are a much bigger task than rehabilitating a house or a commercial district. Additionally, many mills are developed as either one, or two parallel, very long buildings. Some mills are often five or six stories high and have few or no internal divisions other than long rows of wood or steel beams.³² The picture below shows an interior shot of

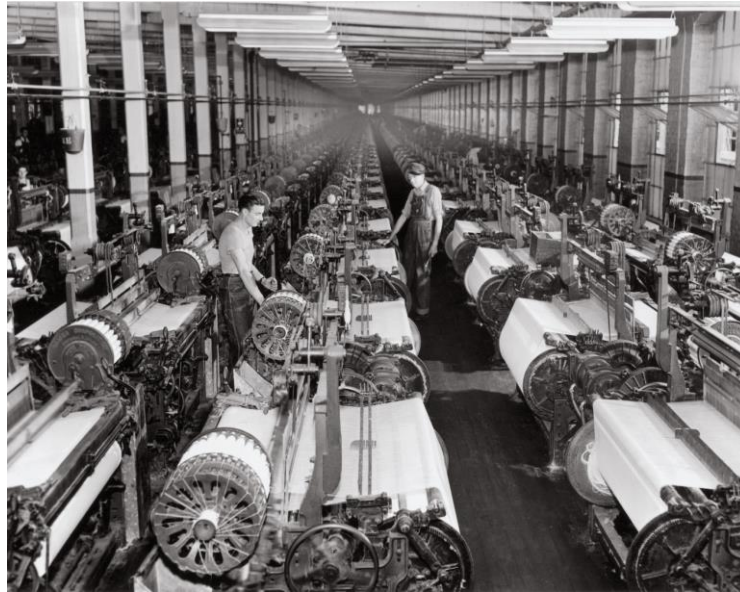
³⁰ North Carolina State Historic Preservation Office, “Mill Tax Credit Projects in North Carolina,” Raleigh: Department of Cultural Resources Division of Archives and History, December 3, 2013.

³¹ Hay, Duncan. 13.

³² Hay, Duncan. 13

Revolution Mill as it functioned during the textile manufacturing period and illustrates these design elements

Figure 4: Image of textile production floor in Revolution Mill, Greensboro, early 1900s



Source: Self-Help Credit Union

The second, more optimistic consideration is that these structures have enormous flexibility to adapt to modern economies. The very same design elements that make these structures so impractical in a textile-free economy make them versatile and accommodating for internal redevelopment for modern needs. These structures are very large and because there were a very limited number of internal dividing structures, they can serve as a blank slate to be redeveloped internally to fit any number of uses. These vacant structures provide a sense of fluidity and ease of transition that most buildings cannot. The buildings are structurally sound and can handle changes in load-bearing or partition walls, with an open floor plan that accommodates any number of evolving floor plans.³³ Additionally, these buildings are

³³ Patrik Jonsson, "Old mills hum with new uses," *Christian Science Monitor* 94, no. 172 (July 30, 2002)

aesthetically pleasing and architecturally interesting with high ceilings, exposed brick and beams, and long expanses of windows that provide plenty of natural light.

Although these vacant structures are often reminiscent of total economic collapse and they present design challenges to modern developments, they can also serve as an opportunity for and a symbol of reinvestment in the local community. And, in cases where these mills are located proximally to downtowns undergoing similar redevelopment efforts like Durham, Greensboro, or Charlotte, they can work together and often provide an opportunity for large-scale developments in areas where large-scale industrial space is not easily found.³⁴

II. Context for Research

There is an abundance of literature on the subject of North Carolina mill history, and much of it focuses on the reasons for North Carolina's manufacturing rise and eventual decline. However, few sources propose ideas for the present state and future redevelopment of the associated mill buildings. The two primary fields of research that I encountered regarding mill buildings are either a discussion of the development of mill buildings in the Southeast or on the social and economic impacts of the mill closings, but I discovered that few sources focus on how to conceive of redeveloping these structures and, relevant to this particular master's project, what types of uses are appropriate once the structure has been redeveloped? The existing literature pertaining to mill preservation and redevelopment is summarized in this section.

³⁴ Tyler G. Moore and Gerald L. Ingalls, "A Place for Old Mills in a New Economy: Adaptive Reuse of Textile Mills in the Charlotte Metro Region".

While the body of literature devoted to historic mill redevelopment largely agrees that the decline of manufacturing in North Carolina became painfully evident and ultimately irreversible sometime in the late 1990s, some scholars point to dates even as early as the late 1970s and early 1980s. Cynthia Anderson's 2000 book on the social consequences of the loss of the textile industry³⁵ analyzed the transformation of the southern textile industry from its origins to its decline beginning in the 1970s and then to modern times. Anderson's book is based largely on the assumption that the post-WWII method of assembly line production and an increasingly competitive international market lead to increasing cost and inefficiency for local American manufacturing firms.³⁶ This trend increased through the 1970s and 1980s, and ultimately forced many firms to consolidate or close altogether, citing a complete inability to compete with the foreign markets for manufacturing these goods. Although this pattern of failure was not instantaneous, and many firms continued to operate for another 20 years depending on industry and location, eventually by the turn of the century American textile manufacturing was no longer a dominant or even viable industry, and the mill buildings were abandoned without purpose.³⁷ These structures went unpreserved and undocumented for decades, and even now few resources exist that generate a comprehensive picture of the historic presence of mills compared to the numbers that exist today other than basic archival resources from local and state Historic Preservation offices.

In an attempt to create a more comprehensive documentation of historic mills around Charlotte, Ingalls and Moore conducted an extensive inventory and analysis of mills in 2001.

³⁵ Cynthia Anderson, "The Social Consequences of Economic Restructuring in the Textile Industry: Change in a Southern Mill Village,"

³⁶ Cynthia Anderson, "The Social Consequences of Economic Restructuring in the Textile Industry: Change in a Southern Mill Village,"

³⁷ Cynthia Anderson

According to their research, of the 118 mills they inventoried, a majority of mills still standing fell into one of two categories: they were either reused for textile manufacturing (37%) or adapted and reused for nonmanufacturing (27%). When considering only those mills located in more highly populated cities (greater than 45,000 people), the latter category grew to 32% and outpaced the former by 4%.³⁸ Ultimately, Ingalls and Moore determined that the feasibility of adaptive reuse seems to depend, at least in part, on the population size of the city where the mill is located.³⁹ This difference may reflect the capacity of larger, more diverse urban markets to absorb and reuse these large structures into their modern economies, since space for development is often at a premium.

In the larger markets, the adaptive reuse examples involved a considerable amount of internal modification. Over half of the examples showed almost total restructuring of the interior, including the addition of new walls dividing up space for storage, smaller offices, or apartments.⁴⁰ Speaking to the latter, more than half (18 of 30 mills) classified as adaptive reuse projects involved redevelopment into housing. About one third of all examples involved commercial or office reuse, and the remaining cases were classified as mixed-use redevelopments, tending to mix elements of commercial, office, and warehousing.

Some of the first research pertaining to mill redevelopment was published by Briggs in 2010. His research identifies the most advantageous redevelopment factors of historic mills, mainly preservation of heritage and culture, as well as environmental benefits from reuse. However, the benefits of reuse are not the same across the board, and his research goes on to identify locational factors that may help or hinder a mill's ability to be successfully redeveloped.

³⁸ Ingalls and Moore

³⁹ Ingalls and Moore, *Textile Mill Reuse in the Charlotte Urban Region*, 2001, 83.

⁴⁰ Ingalls and Moore, *Textile Mill Reuse in the Charlotte Urban Region*, 2001, 85

The first category of locational factors is called “site characteristics”, which describes the conditions of the mill and its immediate location. Factors considered in this category included “mill size, mill age, mill architectural quality, lot size, topography, vegetation, street access, visibility, and drainage”.⁴¹ These factors greatly affect the mill’s feasibility to be redeveloped at all.⁴²

The second set of locational factors discussed in Briggs’ research is called “situational characteristics”. This category assumes a broader approach that takes into consideration the greater urban or rural context that encompasses the mill. Some situational characteristics include “distance to nearest interstate, distance to nearby retail, location next to a river or stream, and neighborhood characteristics like demographics and crime”. This second category largely suggests that a mill’s likelihood of successful reuse is diminished as distance from a major urban nucleus is increased.⁴³ Briggs’ findings corroborate the findings of Ingalls and Moore, who demonstrated that a greater number of adaptive reuse mill projects take place in more populated urban areas like Charlotte.⁴⁴

Using these and other factors, Briggs attempts to develop an algorithm for mathematically predicting whether and how a mill will be successfully redeveloped. Using the geographic profile of previously reused mills, he identifies historic textile mills with the highest potential for future reuse. In sum, abandoned mills that have the highest potential for redevelopment show similar geographic profiles to those mills previously redeveloped, and the category of situational factors proves to be much more influential than the specific site characteristics in determining redevelopment feasibility. For example, the most successful

⁴¹ Buckner, 2003

⁴² Briggs, 2010

⁴³ Briggs, 2010

⁴⁴ Ingalls and Moore, Textile Mill Reuse in the Charlotte Urban Region, 2001, 83.

examples of reused mills tend to be located in areas with young professional, affluent, and more educated populations, which are in keeping with the trend of most redeveloping urban areas, and the Mills tend to benefit from being located in these metropolitan areas. Although Briggs' research is thorough, his algorithm is not a one-size-fits-all model for mill redevelopment and there are certainly examples of successful redevelopments that run counter to his findings.

Most of the applicable literature is formatted as case studies, looking either at a specific case of redevelopment, or at a specific geographic area and taking note of what redevelopment efforts seemed to work best for that area. What is largely absent from the literature on repurposing historic mills is a consideration of creative programming for these redeveloped spaces. Whether the underrepresentation of creative uses in the literature is a reflection of their actual occurrence or not is unclear. However, this paper aims to present a case study where such uses were considered and evaluated, and will add an additional perspective to the field of existing literature.

III. Defining Creative Uses

Although her research is technical and largely focused on the execution of the historic mill tax credits, Morton also briefly reflects on the unique development opportunities that mills present to the community when she suggests:

“The size of a historic mill opens the door for developers to conduct one-of-a-kind projects tailored to their type of community. The economic benefits of a mill rehabilitation project are numerous and robust. The fact that many of these advantages

*cannot easily be whittled into a concise and pithy mathematical result should not diminish their importance”.*⁴⁵

This excerpt outlines two assumptions that are critical in the consideration of this Master’s Project: The first is that mills provide an opportunity to develop a project tailored to the unique attributes of the community. Second is the assumption that the benefits of these projects are not purely economic and are not always quantifiable or even able to be projected in a financial model.⁴⁶ Although she goes on to discuss the ideas of heritage preservation and community symbolism in terms of the structure, this idea could be, and should be extrapolated to include a discussion of building use. In order to truly preserve a structure as a testament to the past, especially in North Carolina where the legacy of these industries is still so evident, it is appropriate to consider preserving not just the building itself, but also preserving the creative and productive characteristics of the original uses that used to fill the buildings.

Duncan Hay attempts to define the concept of “Industrial Heritage” that is so frequently referenced in this conversation about mill redevelopment. Hay notes that over the past few decades there have been many instances of successful mill redevelopment into offices, residences, shops, restaurants, and entertainment venues, and that often these projects serve to rehabilitate a former eye sore and spur reinvestment in the surrounding communities.⁴⁷ However, he cautions that before we celebrate our collective success in preservation, we should recognize that saving the building does not automatically equate to preserving the industrial heritage. He makes the analogy of “clearing out the guts to save the skin”.⁴⁸ The industrial heritage that is

⁴⁵ Erin Morton, The Mills Bill, page 103-104

⁴⁶ Howard, “Hard-to-Quantify Benefits,” 1-3.

⁴⁷ Hay, Duncan. 11

⁴⁸ Hay, Duncan. 11

found in historic structures are central to creating a sense of place and identity in the larger community. According to Hay, this industrial legacy remains in spirit even once the physical structures have been lost to fire or demolition.⁴⁹

Other research by Kristina McIntyre on the Interwoven Stocking Mill redevelopment project supports this idea of use “legacy”. The Interwoven Stocking Company Mill complex was started in 1891 and later was expanded several times, most notably in 1897, 1922, and in 1931.⁵⁰ Similar to most manufacturing town stories, the Interwoven Mill was the largest employer in Martinsburg, WV for more than half a century but was ultimately shut down in 1971. McIntyre’s research focuses on the adaptive reuse of these structures and incorporates her idea of “Ritual and the Industrial Place”.⁵¹ McIntyre claims that industrial production is a ritualistic process, and therefore the buildings used for this process become permanently and deeply associated with the production. Communities and towns come to be defined their factory, and this sense of identity did not end when the manufacturing died. McIntyre says that people remember and keep this connection for a long time.⁵² She goes on to say: *“It therefore makes sense that the repurposing of industrial buildings should draw upon this character, introducing new rituals with the old.”*

In the Interwoven case, the goal in redevelopment was to reflect upon the original goal of the Interwoven Stocking Company and to bring a functional use back into the Mill that provided well-crafted products to the community. She recognizes that while re- implementing the hosiery manufacturing process would be useless in this new economy, there are other “meaningful”

⁴⁹ Hay, Duncan. 12

⁵⁰ McIntyre, Interwoven

⁵¹ Kristina Marie McIntyre, Adaptive Reuse in Martinsburg: The Interwoven School of Crafts. University of Maryland School of Architecture. 2008

⁵² McIntyre, Interwoven, Section 4

industries that would incorporate a “culturally sensitive” use back to the site.⁵³ The Interwoven site was redeveloped into the Interwoven School of Crafts, with a primary program of medium industrial manufacturing including ceramics, glass working, basket weaving, woodworking, and textile weaving.

Literature like McIntyre’s is scarce in the academic world of adaptive reuse. This project will attempt to build on existing Mill literature and provide a case study to develop profiles for various creative uses and subsequently demonstrate how the idea of incorporating historical uses can be woven⁵⁴ into future Mill redevelopment projects.

For purposes of this paper, the term “creative uses” refers to a non-exhaustive and evolving list of uses that I will attempt to define in this section. In the most basic sense, it encapsulates the genre of uses that lie outside of a pure office or multifamily redevelopment. These uses incorporate some active elements, often arts or light-manufacturing based, and include uses that tend to be meaningful or specific to the location. Additionally, for larger mills, one of the most crucial components to this model of incorporating creative uses is the mixing of uses to create an active campus. It should be noted that the concept of “*creative*” uses is no way limited to the four uses detailed in this project, which is only an attempt to detail the uses considered for the Revolution Mill redevelopment. In the following sections I provide further description of the main elements of this definition through a critical examination of case studies.

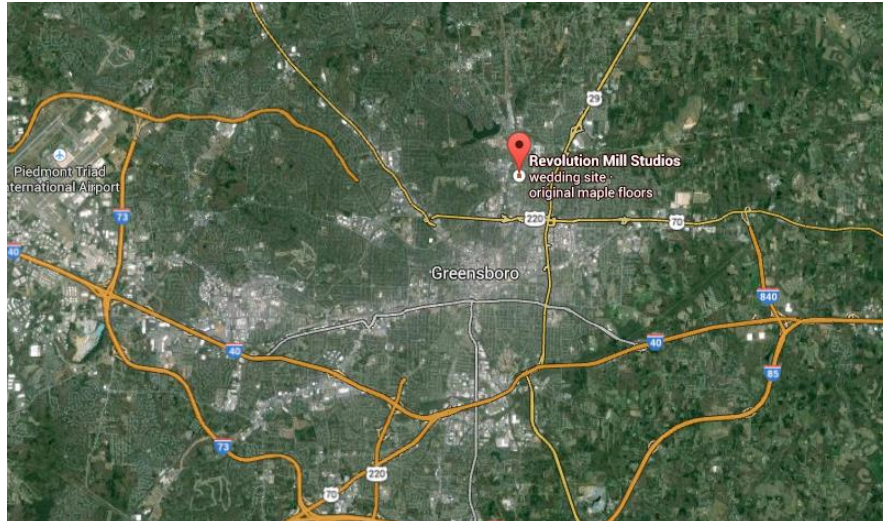
⁵³ McIntyre, Interwoven, Section 4

⁵⁴ Pun intended.

IV. History of the Site & Conditions for Redevelopment

There are very few buildings, if any that are as central to the development of Greensboro as the Cone Mills Complex. Although this case study focuses on redevelopment of just one piece of the complex, it is inseparable from the historic fabric of the nearly two million square foot complex; including Revolution Mill, Revolution Warehouse, Olympic Mill, Printworks Mill, and White Oak Mill. Each of these structures is key to understanding Greensboro's historic development and role as one of the most prominent textile production centers of the American South.

Figure 5: Map showing Revolution Mill in relation to downtown Greensboro



Data: Google, Accessed 3/24/2014

A Century of Textiles

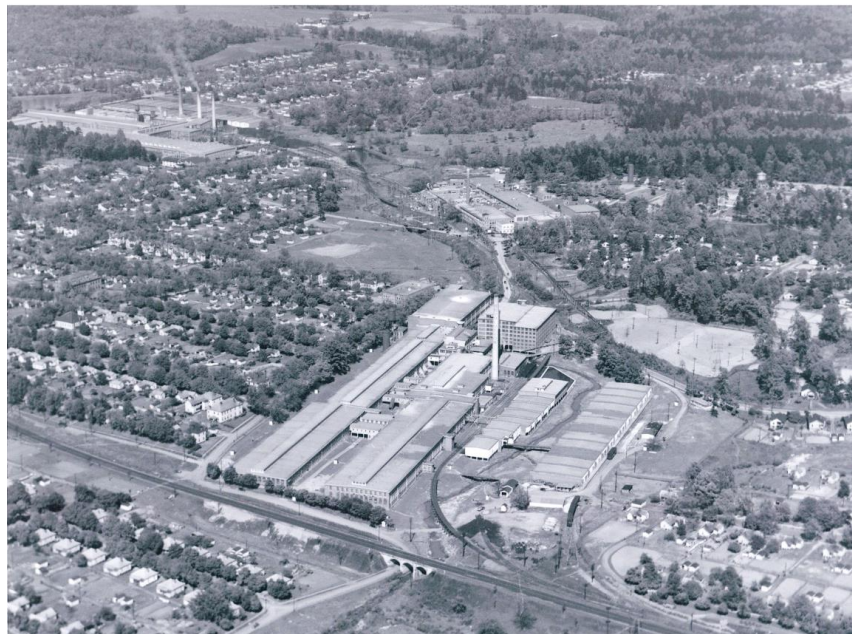
In the late 1890s, brothers Moses and Caesar Cone were involved in developing one of the first southern denim mills, Proximity Mills, which sits in Northeast Greensboro on the north

side of Buffalo creek. Just a few years after Proximity was established, Revolution Mill was developed just up the creek by Cone family friends, Emanuel and Herman Sternberger.

Revolution Mill was constructed as the first, and one of the largest, modern flannel mills in the South. Other Cone mills followed Proximity and Revolution, including White Oak Cotton Mill which was built between 1902 and 1905. White Oak was the largest of the Cone textile production facilities and held title as the world's largest denim mill throughout most of the twentieth century. To this day, the Cone and Sternberger names remain two of the largest and most influential names in Greensboro history, as demonstrated by establishment and massive financial endowments of the Moses Cone Hospital and Health Systems and the Tannenbaum-Sternberger Endowment Foundation.

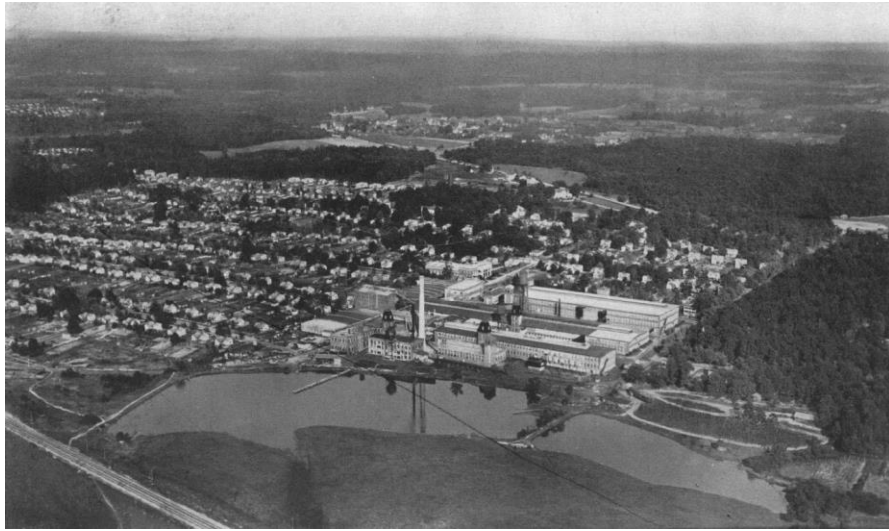
The image below is a historical photograph looking northeast with Proximity Mill shown in the foreground and Revolution Mill shown in the background (top left corner of the image). Buffalo Creek runs between the two mills, and they are surrounded by the mill villages.

Figure 6: Revolution Mill and Proximity Mill



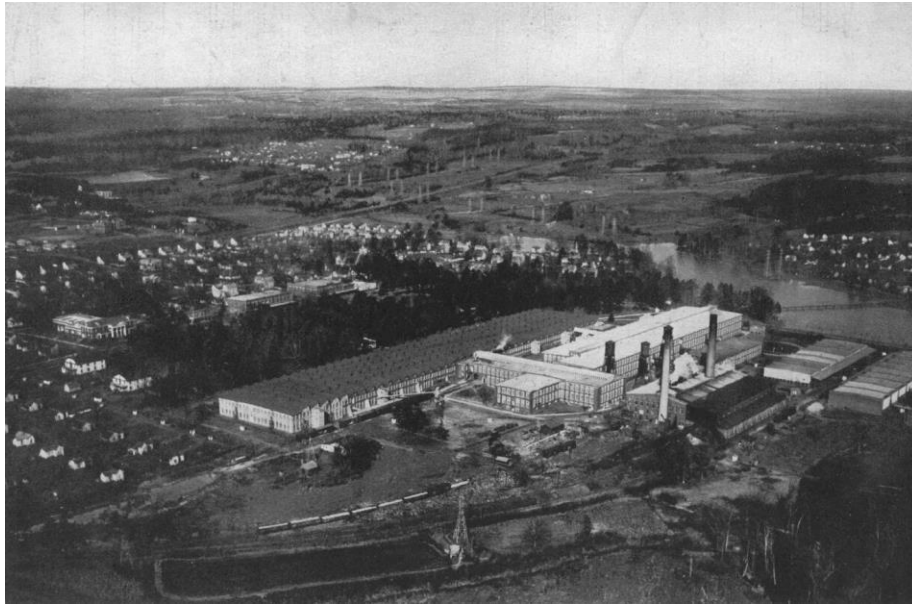
Source: Self-Help Credit Union

Figure 7: Proximity Denim Mill and mill village



Source: Self-Help Credit Union

Figure 8: White Oak Mill and mill village



Source: Self-Help Credit Union

The 1920s witnessed a tremendous growth and maturation of Greensboro's highly profitable textile interests, and by the 1930s Revolution Mill had become the largest exclusive flannel producer in the world, both in output and in physical size; the mill had expanded twice since its original construction. The first expansion was in 1904, with an addition that doubled the

size of the original mill. The second expansion dates to around 1915, when large wings were added to the east and west sides of the mill, nearly doubling its size again.⁵⁵ In the mid-twentieth century all Cone holdings were consolidated under “Cone Mills Corporation”, which was perhaps the single most profitable southern producer of textiles, including everything from corduroy and denim, to towels, diapers, bedding, and other blended fabrics.⁵⁶

The image below shows Revolution Mill around 1950. The road running through the bottom left section is modern-day Yanceyville Street.

Figure 9: Revolution Mill circa 1950



Source: Self-Help Credit Union

The final and most drastic change to the buildings occurred in the late 1960s, when most of the windows in the buildings were closed and the building exteriors were veneered with brick as part of the introduction of conditioned air to the manufacturing process. Cone Mills created

⁵⁵ Courtesy of Preservation Greensboro Incorporated & Benjamin Briggs, Executive Director.
<http://www.revolutionmillstudios.com/history.html>

⁵⁶ Courtesy of Preservation Greensboro Incorporated & Benjamin Briggs, Executive Director.
<http://www.revolutionmillstudios.com/history.html>

denim out of the Revolution Mill until 1982, the year the remaining windows were bricked in and the mill finally ceased operation. In the coming decades, hundreds of Mills across North Carolina would meet an eerily similar fate as textile manufacturing all but disappeared from the American South.

Although it sat vacant, the Revolution Mill complex was placed on the National Register of Historic Places in 1984 due to significant historical associations with early industrial development in Greensboro, with the Cone and Sternberger families, and for distinctive construction techniques, including the “slow-burning construction” standards.⁵⁷

Figure 10: Map showing Revolution Mill today, with preserved mill villages



Data: Google, accessed 3/24/2014

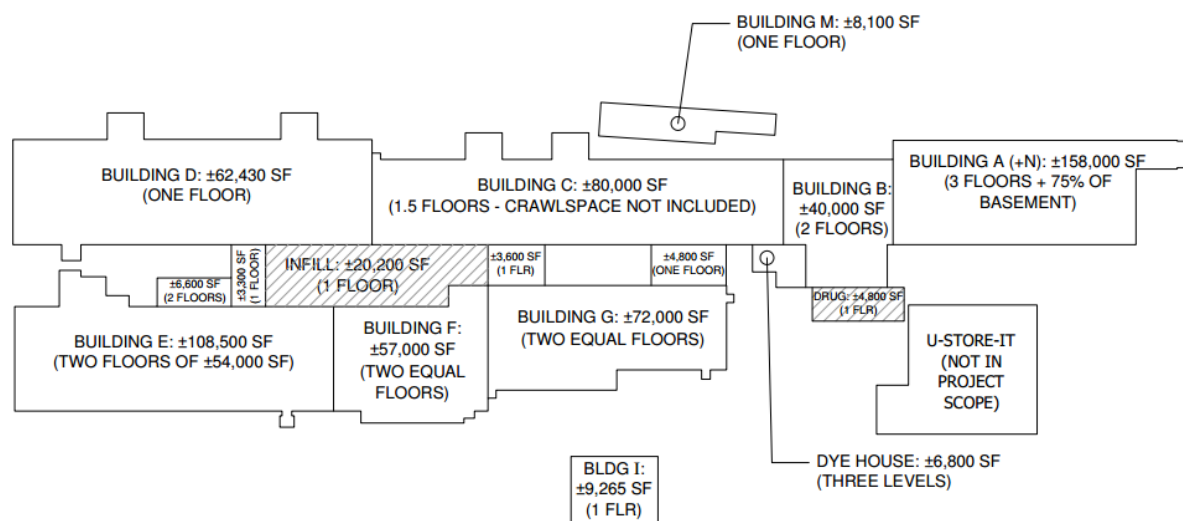
An Unlikely Inheritance

Revolution Mill sat empty and largely untouched for almost twenty years before Greensboro developers Frank Auman and Jim Peeples made plans to redevelop the complex. Auman and Peeples purchased the property in 2003 with a \$23.5 million loan, almost \$6 million of which was loaned by Self-Help Credit Union. The developers managed to redevelop half of

⁵⁷ National Register for Historic Places, NPS Library. Item No 84002324. March, 1984.
<http://nrhp.focus.nps.gov/natregsearchresult.do?fullresult=true&recordid=0>

the complex into Class A office space and a large entrepreneurial incubator (the Nussbaum Center for Entrepreneurship) before the economy completely tanked in 2007-2008. By spring of 2010, Auman and Peebles had completely defaulted on their loan and Bank of America decided to pull the plug on their remaining construction equity. The result was that half of the complex had been redeveloped (shown below as Buildings A, B, C, and D) and was operating with tenants, but the other half of the complex (shown below as Buildings E, F, G, and I) was still sitting vacant, undeveloped, and exposed to the elements.

Figure 11: Floor Plan Layout of Revolution Mill Buildings⁵⁸



Although the redevelopment seemed to be at a standstill, Self-Help still held nearly \$6 million in the project. So, in an effort to limit the damage to their portion of the loan, Self-Help began to pursue the option of buying Bank of America out of their financial interest in the

⁵⁸ *Note for reader orientation:* When Self-Help acquired the project, buildings labeled A, B, C, and D had already been redeveloped into office space and an events center. This paper's discussion of uses pertains to the redevelopment potential of buildings labeled E, F, and G. Additionally, building A is considered in the discussion of uses as it is now being redeveloped for a second time after the Nussbaum Center for Entrepreneurship moved their location off of the property in 2010.

project.⁵⁹ These attempts were ultimately successful, and in July of 2012 Self-Help bought out Bank of America's interest and discussed options with the project owners. In September of 2012, Self-Help foreclosed on the project and subsequently became complete owner-developer of the project.

According to Self-Help Executive Vice President Jim Overton, Self-Help had acquired the property without a thorough understanding of its development potential. Until this point, the Self-Help real estate team had developed smaller projects mostly in Durham, but with this acquisition the Self-Help real estate team had almost doubled their entire real estate holdings portfolio essentially overnight in a market they were generally unfamiliar with.⁶⁰

V. Approach to Considering Uses

Methodology

In July of 2013, as an employee of Self-Help I conducted a detailed market analysis of the Greensboro market area, with subsequent focus on the northeastern quadrant of the city. Originally, this report served to identify existing market conditions in Greensboro for traditional uses, namely multifamily residential and office. For the sake of brevity I have included an executive summary of this report below, but the entire market study is included as an appendix to this document.

I. Executive Summary

This report explores the potential for redevelopment of the Revolution Mill Site, which contains roughly 700,000sf of developable space on 25.5 acres. The report discusses the potential for development of office and residential space, with additional potential for

⁵⁹ Interview with Jim Overton, Self-Help EVP. Conducted February, 2014

⁶⁰ Interview with Jim Overton, Self-Help EVP. Conducted February, 2014

light industrial or entertainment space. At this size, the Mill is able to address a shortage for large, contiguous space for lease (units over 40,000 sf), which will benefit organizations or events that require a lot of space and need to be close to downtown but can't feasibly or affordably locate there.

Appraisal of Revolution Mill suggests that the Class A office space development was part of a "bubble" and that the Mill is closer to B+ space and should look to rent at that level due to its location in a less attractive section of the city. Due to the proximity of Moses Cone Hospital, a majority of existing office stock in the area is medical office used for clinics, outpatient care, administrative offices, labs and other supporting services. Comparable rents for class A and B office space in the area range from about \$10-\$22/sf.

The surrounding residential development is predominantly single-family rental homes (only about 40% are owner occupied). Despite high levels of rentership, the homes are in good condition and well maintained. Existing multifamily residential developments are typically 1-2 bedroom apartments with rents between \$400-\$800/mo. Residential development at Revolution Mill should be of similar, mid-tier rental apartments with a mix of rents (with emphasis on affordable units). Richard Angino suggests a mix of market rate and affordable 1-2 BR units at \$440-\$650/month. Capture rates⁶¹ for residential in Greensboro are very low, around 3-6%, which indicates that the market is able to absorb new product.

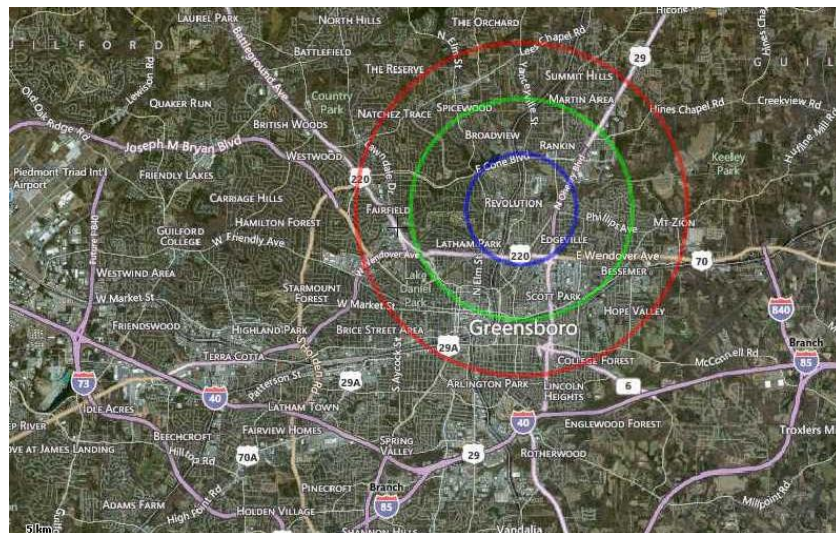
Steady office space and residential development could also eventually support light industrial uses, restaurants, food stores, farmers market, entertainment venues, etc., and potential for these types of developments are also explored.

The entirety of the market study shows that both commercial and housing conditions in the northeastern quadrant of Greensboro, where Revolution Mill is located, were not incredibly diversified and had not seen a great deal of growth or investment in the past decade. However, that area of Greensboro has relatively few middle/upper-middle tier residential options, which makes multifamily development a viable option, and the proximity to Cone Hospital made the

⁶¹ Capture rate is the total number of units developed divided by the total number of qualified renter households in the primary market area. Lower capture rate ratios indicate that there is a larger number of qualified renter households in the area and that the units will be absorbed in the local market.

mill a viable location for supporting medical office facilities. Since half of the space had already been redeveloped as office space and was generating a steady stream of income, it would not have been surprising if the conclusions drawn from the market study were to develop the remaining portion as office space as well. Although not a major focal point of the market study, the final section of the report concluded that a successful redevelopment of office and residential spaces had the potential to support more creative uses like light industry, restaurants, farmers markets, and entertainment venues. The map below shows the orientation of Revolution Mill with regards to downtown Greensboro.

Figure 12: Map: One, two, and three-mile radius shown around development site



Source: Sites to do Business

Later discussions with Eddie Belk of Belk Architecture⁶² suggested an interesting caveat to our attempt to define the Greensboro market. That is, market studies are more of a rear view science and cannot help evaluate uses unless you are creating something that already exists.

⁶² Belk Architecture has designed plans for over four million square feet of industrial mill space, and he leads the region in rehabilitation projects. Mr. Belk is recognized for his work on historic mill redevelopment projects across the state, including Golden Belt, Brightleaf Square, and the almost one-million square foot American Tobacco Campus. Of particular relevance to this research is Eddie Belk's reputation for incorporating and mixing creative uses in his redeveloped structures. Belk Architecture is the firm currently involved with the Revolution Mill project.

Market studies are useful, and serve to show how certain uses are being absorbed presently and might possibly be absorbed in the future, but they lack the ability to show or predict the demand for more unique uses that are not already established. For example, a market study may indicate a low or nonexistent level of demand for incubator space in a community without an existing incubator. However, if this space gets developed and taps into a previously unserved market population, then the demand for this space could turn out to be very strong. Such was the case in developing the American Underground technology incubator as a part of the American Tobacco Campus in Durham, NC. The idea of creating a technology co-working space was, in some way, a reactionary idea to the design challenge of a large, unfinished basement space.⁶³ The design and needs of a technology incubator fit the space, and it has now developed into the region's largest hub for entrepreneurs--totaling nearly 30,000 square feet of space that houses investors, technology accelerator programs and over thirty startups.⁶⁴ It turns out that the local market demand for incubator space was so healthy that American Underground has developed two expansions since the initial venture: The American Underground in Raleigh and another location in downtown Durham.⁶⁵ Therefore, in some cases a market study alone is not a reason to rule out these more creative, alternative uses.

Additionally, the Self-Help team developed this concept of the Mill as its own, self-contained campus. As it currently exists and as it could possibly exist in the future, Revolution Mill is not simply just a submarket in Northeast Greensboro. So in dealing with certain locational factors and considering redevelopment potential, the Self-Help team has consistently treated this site as a destination development. Apartment complexes and office parks are not frequently

⁶³ Interviews with Eddie Belk, Belk Architecture

⁶⁴ American Underground Website <http://www.americanunderground.com/>

⁶⁵ <http://www.americanunderground.com/>

considered “destinations”, and so the Self-Help team began to consider alternative uses that were not well represented in the market analysis but would be a creative and opportunistic fit for the property.

Developing and promoting this type of destination campus requires strong marketing efforts and clear branding of the new development. The Toronto-based real estate development firm Live Work Learn Play has an extensive portfolio of redevelopment work of individual sites and entire blocks to create these types of vibrant, mixed-use destination developments.⁶⁶ They attempt to brand their communities by developing authentic and identifiable neighborhoods that “reinforce and celebrate regional history, heritage, culture, economy, and personality”. This involves incorporating a comprehensive mix of uses including physical, commercial, cultural, recreational, and social elements, the sum of which creates “the iconic character and personality of a place.”⁶⁷

Belk Architecture has designed plans for over four million square feet of industrial mill space, and he leads the region in rehabilitation projects. Mr. Belk is recognized for his work on historic mill redevelopment projects across the state, including Golden Belt, Brightleaf Square, and the almost one-million square foot American Tobacco Campus. Of particular relevance to this research is Eddie Belk’s reputation for incorporating and mixing creative uses in his redeveloped structures. Fortunately, his firm is a part of the Revolution Mill development team, and has brought invaluable insight and experience to the project, which I attempted to capture through interviews and incorporate into the following sections.

⁶⁶ Live Work Learn Play, Guiding Principles. <http://www.lwlp.com/why/our-guiding-principles.html> Accessed March 2014.

⁶⁷ Live Work Learn Play, Guiding Principles: Personality. <http://www.lwlp.com/why/our-guiding-principles.html> Accessed March 2014.

Additional interviews were conducted with Jim Overton, Executive Vice President, and Malcolm White, Director of Marketing and Leasing, of Self-Help to capture the how and why specific uses have been such an important consideration in the second half of this project from an owner-developer perspective. In the following sections I will detail the four major market niches the Self-Help team considered for space redevelopment and the successful implementation of these uses in other mill redevelopment projects.

Large-Scale Users: Community Institutions

One of the most crucial themes to arise from the market analysis was that, simply put, the offering was unique, and for several different reasons. First, Greensboro has a sizeable market gap for large commercial or office spaces (roughly defined here as greater than 25,000sf or so).⁶⁸ Therefore, nearly any tenant who needed a large amount of contiguous leasable space with relative proximity to downtown would need to build new construction. Given this assumption, there is an exploitable market advantage given the abundance of large, open space still undeveloped in Buildings E, F, and G.

Large office is the market niche that the Self-Help team is most familiar with in terms of sourcing and developing for, particularly in anticipating the particular fit-up needs of a large tenant and office tenants require relatively low levels of ongoing management. Aside from private firms, the biggest single office users in Greensboro are government (Greensboro and Guilford Co.), Educational Institutions (UNCG, Guilford Tech), and medical office users (Cone Health). Incorporating a large, community-associated or institutional tenant is a great way to begin to incorporate the project into the community and form partnerships with key players in

⁶⁸ Revolution Mill Market Study, July 2013

the local economy. Developing spaces like this tend to be safe investments and help to anchor a development.

For this potential use the Self-Help team looked to partner with Moses Cone Hospital systems. In downtown Greensboro and in the Northeastern quadrant of the city, Moses Cone Health is one of the single largest economy drivers. The hospital and healthcare system has a significant need for service buildings, lab space, and administrative office space, and this redevelopment offers them unique and relatively unlimited amounts of space that is proximately located in their primary service area.⁶⁹

American Tobacco Campus, Durham N.C.

Partnering with major community institutions is an effective way to secure community investment and create a sense of legitimacy in the redevelopment. In the case of Revolution Mill, partnering with Moses Cone occurred once the redevelopment had begun, but oftentimes these community partnerships are crucial to getting the redevelopment started. Such was the case with the redevelopment of the American Tobacco Campus in Durham, NC, the largest historic redevelopment project in North Carolina history.⁷⁰

⁶⁹ In December 2013, Moses Cone Physician Services signed a 5-year contract to rent nearly 8,000sf of space.

⁷⁰ D-3 Development Website. <http://www.d3-development.com/american-tobacco/>, accessed March 2014

Figure 13: American Tobacco campus, Reed Building 1906



Source: *Open Durham*⁷¹

By the year 2000, downtown Durham was, by all accounts, a ghost town.⁷² The once-booming tobacco town, formerly occupied by the American Tobacco Company and Liggett & Myers, stopped manufacturing tobacco products in Durham in 1987 and 2000, respectively.⁷³ Once the companies closed their gates, the many ornate brick factories sat dormant and fell into disrepair, and began to serve only as a very large and visible symbol of disinvestment.

⁷¹ <http://www.opendurham.org/buildings/washington-building-blackwells-durham-tobacco-american-tobacco-co>

⁷² Eric Ferreri, 2011

⁷³ Eric Ferreri, THE REVITALIZATION OF THE AMERICAN TOBACCO CAMPUS. ICOSA Network, October 19, 2011. Accessed March 2014 <http://www.icosamedia.com/2011/10/the-revitalization/>

Figure 14: American Tobacco campus, Reed Building after redevelopment



Source: Open Durham⁷⁴

Although these structures were considered prime candidates for redevelopment, formal plans did not take hold until the early 2000's, thanks in large part to Jim Goodmon of Capitol Broadcasting. Goodmon began seeking out investors and potential tenants who were willing to take a gamble on downtown Durham.⁷⁵ Durham's largest investor, Duke University, had a very limited presence in downtown and was weary of investing in such an enormous project.⁷⁶

However, Duke turned out to be an integral piece to the redevelopment plan because a Duke lease promised stability and commitment on a huge and permanent scale. However, Duke could not be the sole investor in such a project, and nor did they want to be. In the vision for redeveloping downtown Durham, Duke stated that they did not want "downtown Durham to be

⁷⁴ <http://www.opendurham.org/buildings/washington-building-blackwells-durham-tobacco-american-tobacco-co>

⁷⁵ <http://www.opendurham.org/buildings/washington-building-blackwells-durham-tobacco-american-tobacco-co>

⁷⁶ Eric Ferri, THE REVITALIZATION OF THE AMERICAN TOBACCO CAMPUS. ICOSA Network, October 19, 2011. Accessed March 2014 <http://www.icosamedia.com/2011/10/the-revitalization/>

downtown Duke,”⁷⁷ citing a desire for an “eclectic place with a broad economic base.”⁷⁸

Therefore, Duke made their 100,000 square foot lease contingent upon securing three additional for-profit companies who would collectively lease that same amount of space.⁷⁹

Ultimately, the \$200 million project redeveloped an eleven-building campus into approximately 850,000 rentable square feet.⁸⁰ This development also included two adjacent parking structures and a man-made river that runs between the two sides of the complex.⁸¹ At the completed American Tobacco Campus, Duke leased nine spaces among the sixty or so businesses occupying space in the complex.

Figure 15: American Tobacco Campus Interior Courtyard after redevelopment



Source: Open Durham

⁷⁷ Scott Selig, Associate VP for Capital Assets, Duke University. From: Eric Fererri, THE REVITALIZATION OF THE AMERICAN TOBACCO CAMPUS. ICOSA Network, October 19, 2011. Accessed March 2014

⁷⁸ <http://www.icosamedia.com/2011/10/the-revitalization/>

⁷⁹ Eric Fererri, 2011

⁸⁰ Eric Fererri, 2011

⁸¹ Eric Fererri, 2011

⁸¹ D-3 Development website: <http://www.d3-development.com/american-tobacco/> accessed March 2014.

Figure 16: American Tobacco Campus Interior after redevelopment



Courtesy: Myrick Howard and Preservation NC

Light Manufacturing

Artisanal Manufacturing

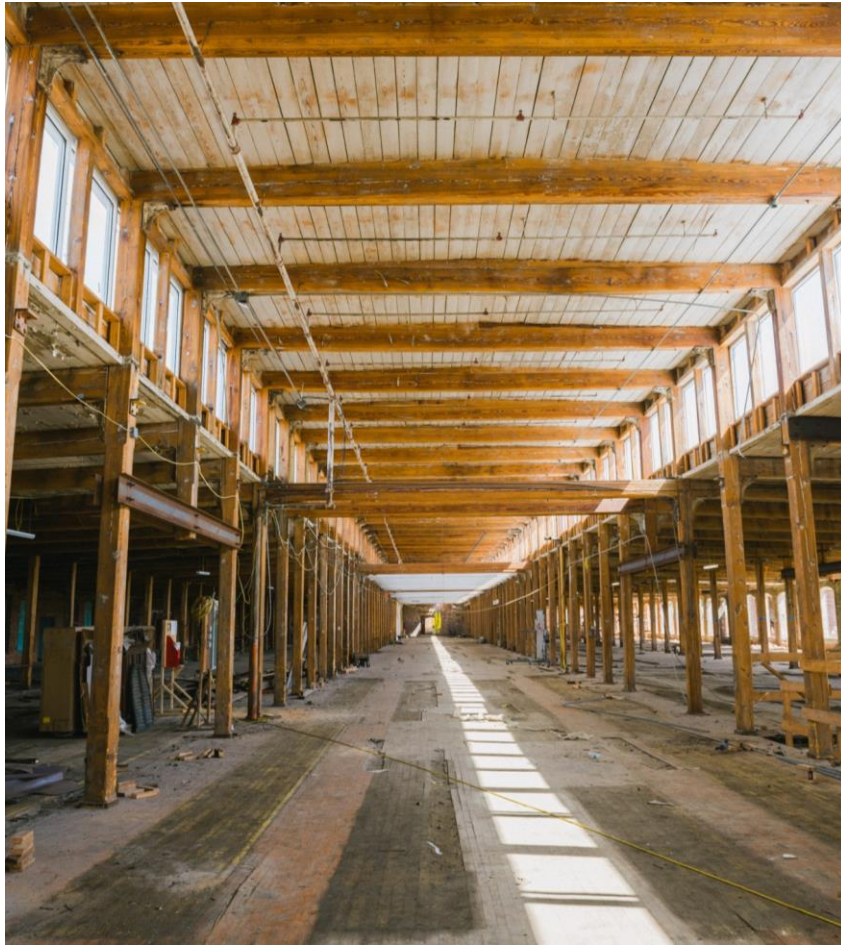
Recently, there has been a renewed interest in American production and local economies, and some are beginning to view these historic buildings and this work force as an opportunity for redevelopment and adaptation to a new type of manufacturing demand called Artisanal manufacturing. This new type of demand has given way to two major developments: The first is a renewed interest, primarily by young professionals, in starting small, independent manufacturing firms that create products using local, sustainable inputs. The primary marketing strategy for these products is based on the idea that the products are American and locally made, using environmentally and social responsible inputs, and the demand is definitely there for this market segment. The second major development is a renewed interest in redeveloping historic

real estate like Mills and Tobacco Warehouses into creative, urban hubs for small businesses, retail, residential, etc. These real estate ventures often go hand in hand with the types of manufacturing ventures mentioned previously, and often serve as a catalyst for subsequent downtown redevelopment and community revitalization.

Incorporating uses that include manufacturing and production enlivens the campus and creates a different kind of vibe. Plus, beyond just creating a creative and interesting space, this type of use also pays homage to the Mill's industrial past. It feels appropriate. Taking large, powerful, industrial buildings and putting something creative and industrious back in there seems like a perfect fit.

Besides the theoretical implications of such a use, this redevelopment has the possibility of accommodating such manufacturing because issues of power, venting, etc. can be addressed early, while working with a blank slate. Additionally, these buildings were built with solid timber and masonry and in some areas, solid concrete floors. Much of it remains unfinished and is the perfect structural environment for a creative manufacturing use (shown below).

Figure 17: Revolution Mill Building A gutted



Source: Self-Help Internal, 2014.

Often, such manufacturing involves the creative arts. One example is the Interwoven School of Crafts that was detailed previously. Another example is Central Park in Star, NC, home to StarWorks, which was redeveloped into an artisan community and put in place ceramics and glassworks facilities to attract craftspeople to the campus.⁸² One of the most commonly referenced examples of this type of development is the Golden Belt development in downtown Durham, NC.

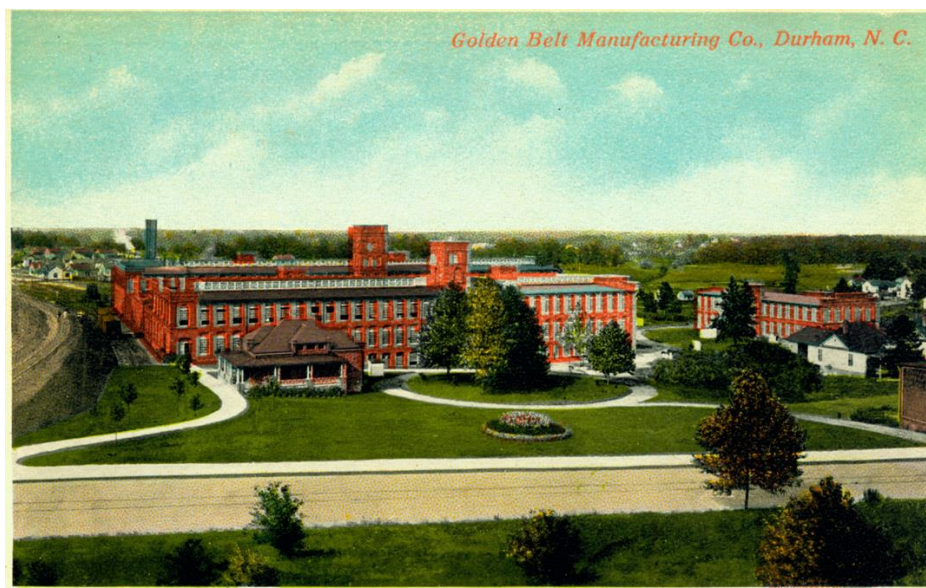
⁸² <http://starworksnc.org/about-us.html>

Golden Belt, Durham N.C.

Golden Belt (The Golden Belt Manufacturing Company) was first developed in 1900 as a textile factory that processed cotton into thread and produced pouches for Bull Durham tobacco.

⁸³ The complex attempted to adapt to the loss of manufacturing and continued to produce thread and cloth for other uses and printed packaging for cigarettes until operations were discontinued in 1996.⁸⁴

Figure 18: Golden Belt Textile Mill, 1910



*Source: Open Durham*⁸⁵

In 2006, the southern portion of the complex was purchased by Andy Rothschild of Scientific Properties for \$2.6 million, and he proposed to develop a mixed use project that would include artist studios, apartments, retail, and office space.⁸⁶

⁸³ Open Durham <http://www.opendurham.org/buildings/golden-belt-manufacturing-co>, accessed March 2014

⁸⁴ Open Durham <http://www.opendurham.org/buildings/golden-belt-manufacturing-co>, accessed March 2014

⁸⁵ <http://www.opendurham.org/buildings/golden-belt-manufacturing-co>

⁸⁶ Open Durham, <http://www.opendurham.org/buildings/golden-belt-manufacturing-co>, accessed March, 2014

Figure 19: Golden Belt Redevelopment site plan showing artist studios in building 3 (starred)

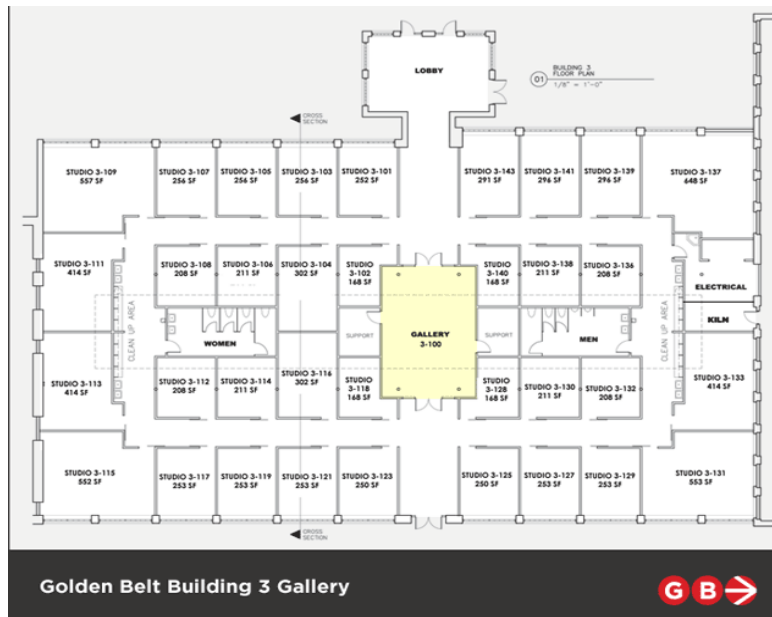


Source: Golden Belt Website

The vision behind the redevelopment was to celebrate Golden Belt’s rich heritage by redeveloping it in a way that is conscious of its history and would “reaffirms the spirit of creativity, innovation and entrepreneurship that is Golden Belt’s greatest legacy.”⁸⁷ The resulting development includes 35 work-only artist studios placed around a central gallery space in Building 3 of the campus (see below).

⁸⁷ Golden Belt website

Figure 20: Golden Belt Building 3: Artist Studios and gallery layout



Source: Golden Belt website

Figure 21: Golden Belt before redevelopment, 2007



Source: Open Durham⁸⁸

⁸⁸ <http://www.opendurham.org/buildings/golden-belt-manufacturing-co>

Figure 22: Golden Belt after redevelopment, 2008



*Source: Open Durham*⁸⁹

The mill provided flexibility in developing artist studios that range in size from 168 square feet to more than 600 square feet. The space also provides even larger studio spaces for artist cooperatives.⁹⁰ Other design elements found in the mill like concrete floors, natural light, and generous wall space are also conducive for artist studios and gallery spaces. Additionally, large equipment like kilns and printing presses can be accommodated.

⁸⁹ <http://www.opendurham.org/buildings/golden-belt-manufacturing-co>

⁹⁰ Golden Belt website

Figure 23: Artist Studio at Golden Belt



Source: Golden Belt Website

Hope Webbing Mill, Pawtucket, R.I.

Another example of incorporating arts-based manufacturing into Mill redevelopment was done by the California-based firm Urban Smart Growth. In 2005, this firm acquired the remains of the Hope Webbing Company Mill in Pawtucket, Rhode Island. The Hope Webbing Company mill was originally constructed in the 1870s, but underwent several expansions through 1910 and eventually held the title for the world's largest narrow woven fabric plant.⁹¹

⁹¹ National Register for Historic Places
http://www.preservation.ri.gov/pdfs_downloads/national_pdfs/pawtucket/pawt_main-street-999-1005_hope-webbing-company-mill.pdf Accessed March 2014

Figure 24: Hope Webbing Company Mill, Pawtucket Rhode Island



Source: National Register for Historic Places⁹²

Figure 25: Hope Webbing Company Mill, Pawtucket Rhode Island



Source: National Register for Historic Places⁹³

⁹² Rhode Island State Historical Preservation and Heritage Commission, accessed March 2014
<http://www.preservation.ri.gov/register/riproperties.php>

⁹³ Rhode Island State Historical Preservation and Heritage Commission, accessed March 2014
<http://www.preservation.ri.gov/register/riproperties.php>

Figure 26: Hope Webbing Company Mill, Pawtucket Rhode Island



Source: National Register for Historic Places⁹⁴

Figure 27: Hope Webbing Company Mill, Pawtucket Rhode Island



Source: National Register for Historic Places⁹⁵

Since acquiring the property, Urban Smart Growth has engaged in a multi-million dollar redevelopment, creating a village of small-scale artisan manufacturing space, incubator office

⁹⁴ Rhode Island State Historical Preservation and Heritage Commission, accessed March 2014
<http://www.preservation.ri.gov/register/riproperties.php>

⁹⁵ Rhode Island State Historical Preservation and Heritage Commission, accessed March 2014
<http://www.preservation.ri.gov/register/riproperties.php>

space, artistic and individualist retail space, live/work studios, bar/restaurants and music venues.⁹⁶ The development of Hope Artiste Village has resulted in the creation of over 300 jobs, a built-in community, and a diverse grouping of tenants that includes a bakery, coffee roaster, yoga studio, and a local outpost of the Farmers Market. Now the firm is evaluating the redevelopment of the remaining portion into residential units to truly create a live/work/play community.⁹⁷

Greensboro's central location within the Triad makes this concept of incorporating arts-based manufacturing a viable regional idea. Allowing people to see other people craft creates an attraction and vibrancy within a place. In considering Greensboro's history, the Self-Help team looked at high-end weavers who still produce cotton and denim. Incorporating artisans and craftsmen has the potential to create many active tenant spaces and provides the setting for a creative cluster or economy to develop. Additionally, to the extent that manufacturing, even on a small scale, creates jobs, this opens new avenues of support for such a project. By tapping into a local, more underground niche like craft manufacturing that requires a large amount of industrial space, the potential for growth seems huge.

Food Manufacturing

In a model not too different from the artisanal manufacturing concept, food manufacturing is another use that should be considered in this category of production uses. The proliferation of hand-made products – from pickles to salsa to hot sauce – now sold in traditional grocery stores leverages the “buy local” and environmental movements, nationwide. These

⁹⁶ UrbanSMARTGrowth Website

⁹⁷ UrbanSMARTGrowth website

producers usually use locally-sourced ingredients, and provide interesting, albeit modest, jobs. It is a relatively low-skill profession, though of course food entrepreneurs have to be competent business people, too.

Similarly to arts manufacturing, a Mill is a great blank canvas for developing shared production spaces for several producers who might want to share equipment or packaging materials. You could also model this type of venture after more of a traditional entrepreneurial/co-working space and reach some level of critical mass of local food producers, perhaps because of the provision of shared kitchen equipment and time, or business/marketing advice.

The availability of food creates a destination at Revolution Mill and it also gives rise to the possibility of events that bring more people onto the campus. Food production also provides an opportunity for branding of the space, especially with popular local products. The perfect example of this concept is a popular local or maybe regional brewery that would brew and bottle their beer in spaces at the Mill, and also potentially operate a taphouse or restaurant out of the space. It seems like almost every redeveloping town has at least one iconic brewery, like Natty Greene's in Greensboro, Foothills in Winston-Salem, or Full Steam in Durham. Incorporating a locally known brand could give the mill some credibility while also serving as a destination and attraction to bring people to campus.

Another example of local branding that is becoming more popular is coffee roasters like *Krankies coffee* in nearby Winston-Salem. Krankies is located in downtown Winston-Salem, although not particularly centrally, in an old warehouse building that held giant motors from an old electric motor business. The space was first redeveloped primarily for musicians and artists,

but the only thing generating revenue was the concession stand, called Krankies.⁹⁸ So, the operating partners purchased a coffee roasting business and Krankies became the lifeblood of the venture, which still attract artists and businesses to rent some of the funky interior spaces or gallery spaces. Owner John Bryan describes the relationship between all of these active uses by saying: “[P]eople want to be close to one another, a design group next to a biologist next to a video game maker next to someone who’s preparing a really great organic coffee... Creative people especially gravitate toward density. People feed on each other’s energy.”⁹⁹

Internal redevelopment and build out was minimal, and the interior maintains a rough, unfinished industrial aesthetic. All of the beans are roasted inside the shop, an operation that is visually very interesting. Although Krankies is the most well branded element of this project, the space is also home to many other creative users like a graphic design and print shop; guitar and violin teachers who offer studio lessons; and artists who rent studios to do their work. The space also includes a gallery and a performance stage.¹⁰⁰

⁹⁸ Wake Forest Innovation Corridor News. “Creativity, Collaboration, and Coffee”. February 2013. <http://www.wakeforestinnovationquarter.com/news-events/creativity-collaboration-and-coffee/> accessed March 2014.

⁹⁹ Wake Forest Innovation Corridor News

¹⁰⁰ Wake Forest Innovation Corridor news; also: personal experience

Figure 28: Krankies Coffee, Downtown Winston-Salem NC



Source: Krankies Coffee

There are many other models of food manufacturing uses, but for this concept the key element is to incorporate the production of the good that is also being consumed. By roasting coffee beans at the coffee shop or brewing the beer at the bar, it helps to create an active destination that fits with the industrial redevelopment.

Event Space

Although the event space at Revolution Mill is a result of the original redevelopment plan and was already operational when the Self-Help team acquired the project, this is a use that seems to be implemented successfully in Mill redevelopment projects. Smaller industrial buildings could be fully transformed into a venue, while larger complexes could be broken down and partially developed into a venue. Myrick Howard, President of Preservation NC, cited the

redevelopment of the Laboratory Mill in Lincolnton, NC into a medium-sized events venue as one of his favorite Mill redevelopments.

Lincolnton Cotton Factory, Lincoln, N.C.

The original Lincolnton Cotton Factory was built in 1818, and was later rebuilt in 1887 after being burned to ground during the Civil War. It was subsequently owned by the Rhyne family and renamed the Laboratory Mill, where it served as a cotton factory until being closed in 1994.¹⁰¹ More than 13 years later, John and Cyndi Dellinger bought the old mill from Preservation North Carolina (PNC) in 2007. The Rhyne family had donated the mill to PNC hoping that it would be able to have a new life. The Dellingers promised this new life through their vision to redevelop this factory into a 20,000 square foot events space in Lincoln.

The space has many interesting and distinct design elements that would be advantageous for an event space. The belfry wing and the river wing are on the top floor. The belfry wing has a unique clerestory and the ceiling is supported by a bridge truss system, so that the entire 60-foot-wide expanse is open, with no supporting columns. Another wing, the former carding room, is on the bottom floor. This wing has large windows that offer a view of the South Fork River that originally powered the mill's turbines.¹⁰²

¹⁰¹ Wayne Howard. "Laboratory Mill Celebrates Grand Opening", Lincoln Herald, 10/31/2013, accessed 3/2014

¹⁰² Wayne Howard. "Laboratory Mill Celebrates Grand Opening", Lincoln Herald, 10/31/2013, accessed 3/2014

Figure 29: Laboratory Mill Event Center, Lincolnton NC, Before



Figure 30: Laboratory Mill Event Center, Lincolnton NC, After¹⁰³



¹⁰³ The Laboratory Mill: Restoration Photos Before and After.
http://www.thelaboratorymill.com/index_files/Page656.htm Accessed March 2014.

Figure 31: Laboratory Mill Event Center, Lincolnton NC, Before¹⁰⁴



Figure 32: Laboratory Mill Event Center, Lincolnton NC, After¹⁰⁵



¹⁰⁴ The Laboratory Mill: Restoration Photos Before and After.
http://www.thelaboratorymill.com/index_files/Page656.htm Accessed March 2014.

¹⁰⁵ The Laboratory Mill: Restoration Photos Before and After.
http://www.thelaboratorymill.com/index_files/Page656.htm Accessed March 2014.

Figure 33: Event Space at Revolution Mill¹⁰⁶

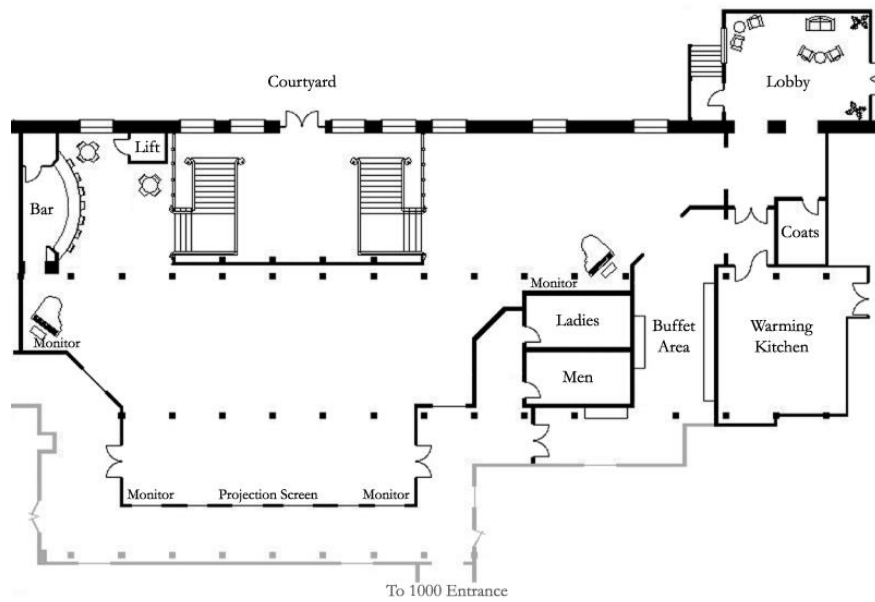


Figure 34: Event Space at Revolution Mill



¹⁰⁶ Source: Self-Help Credit Union

Figure 35: Event Space at Revolution Mill



Figure 36: Event Space at Revolution Mill

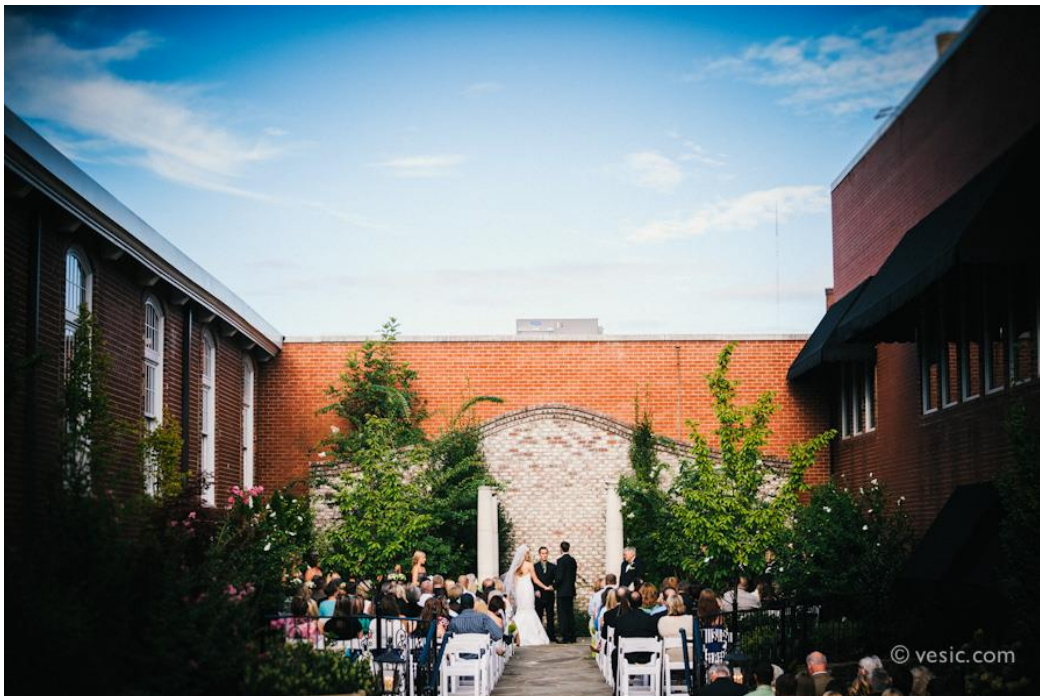


Figure 37: Event Space at Revolution Mill



Live & Work

The final creative use analyzed for this thesis was the concept of a live and work campus. The Toronto-based real estate development firm Live Work Learn Play has an extensive portfolio of redevelopment work of individual sites and entire blocks to create these types of vibrant, mixed-use destination developments.¹⁰⁷ The principles that guide this type of development for LWLP are Place, Personality, and Performance. The “Place” aspect refers to developing authentic and identifiable neighborhoods that “reinforce and celebrate regional history, heritage, culture, economy, and personality”. This principle encourages developments that are conscious of and promote the history and heritage of place, which is an important element of historic Mill rehabilitation.¹⁰⁸ The “Personality” component refers to developing a

¹⁰⁷Live Work Learn Play: Selected Projects. <http://www.lwlp.com/works/revitalization.html> Accessed March 2014.

¹⁰⁸ Live Work Learn Play, Guiding Principles: “Place”. <http://www.lwlp.com/why/our-guiding-principles.html> Accessed march 2014

comprehensive mix of uses including physical, commercial, cultural, recreational, and social elements, the sum of which creates “the iconic character and personality of a place”.¹⁰⁹ This idea promotes a healthy and organic mix of uses that promotes people of all types to come to the campus for a variety of reasons.

Last is the principle of “Performance”. Although less ideological than place and personality, the concept of performance is crucial to developing a successful mixed-use campus because in the end, the campus must be financially viable. This principle emphasizes maximizing revenues and continually growing the economy of that place.¹¹⁰ Aside from internal financial objectives or obligations, a financially well-performing development will attract businesses, residents, and visitors, and often can create a renewed sense of investment in a town or neighborhood. This is a vital need in many Mill redevelopment neighborhoods, and a successful implementation of these principles has the potential to really strengthen the core of the community.

Conant Thread Mill, Central Falls, R.I.

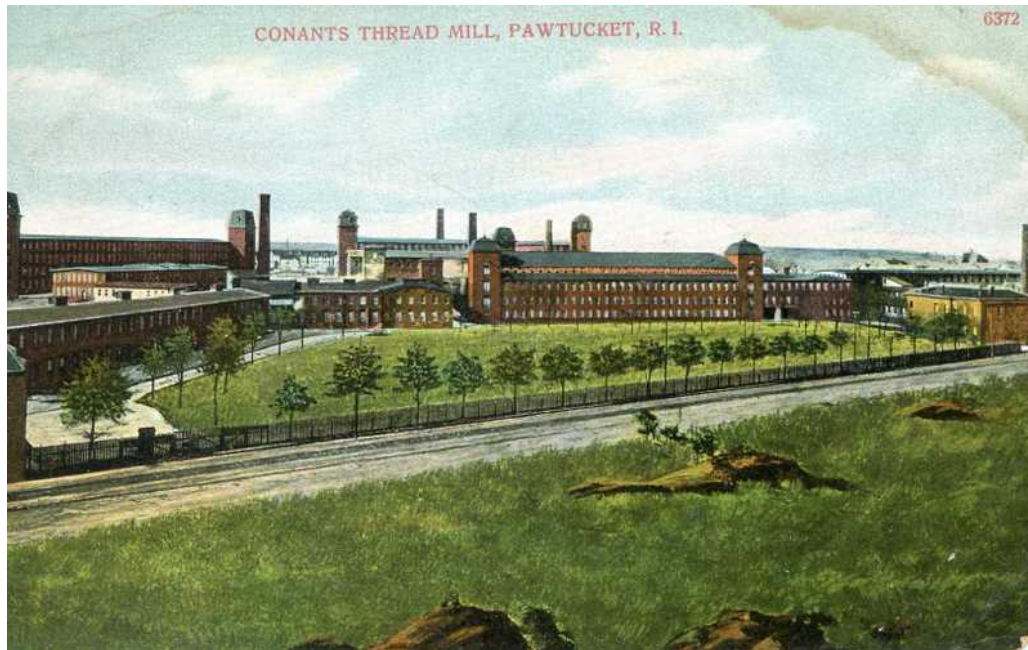
The previously mentioned firm Urban Smart Growth is another firm doing redevelopment work under these live-work principles. Recently this firm has made plans to redevelopment the Conant Thread Mill in Central Falls, RI. This former thread and spooled cotton complex contains seven buildings and over one million square feet of space spread across

¹⁰⁹ Live Work Learn Play, Guiding Principles: “Personality”. <http://www.lwlp.com/why/our-guiding-principles.html> Accessed march 2014

¹¹⁰ Live Work Learn Play, Guiding Principles: “Performance”. <http://www.lwlp.com/why/our-guiding-principles.html> Accessed march 2014

17 acres.¹¹¹ Soon after ceasing operations, the complex was added to the National Register in 1983.¹¹²

Figure 38: Conant and Coats Thread Mill, Pawtucket RI



Source: *TextileHistory.org*¹¹³

The Urban Smart Growth development plan was to create a vibrant mixed-use redevelopment that provides space for artisanal manufacturing tenants, live/work artist lofts, and specialized retail. Their vision was to develop a “town within a town”: a mixed-use, walkable redevelopment that included 500 homes and several hundred jobs on site.¹¹⁴ In fact, in this particular case, this creative mix of uses was almost promoted by the zoning designation of “Mill

¹¹¹ UrbanSMARTgrowth.com: Development Projects. The Thread Factory Redevelopment <http://www.urbansmartgrowth.net/thread.htm> Accessed March 2014.

¹¹² National Register of Historic Places. Conant Thread--Coats & Clark Mill Complex District. November, 1983. <http://nrhp.focus.nps.gov/natregsearchresult.do?fullresult=true&recordid=0> Accessed March 2014.

¹¹³ Mock, Gary. “Coats & Clark Thread”. 2013. <http://www.textilehistory.org/CoatsandClarkThread.html> accessed March 2014

¹¹⁴ Urban Smart Growth. Thread factory Development Plan. November 2007. http://www.urbansmartgrowth.net/pdf/thread_development_plan.pdf Accessed March 2014.

Building Reuse Overlay District”, which allows any number of uses including retail, residential, office, commercial, Biotech, artist studios and light manufacturing.¹¹⁵

Figure 39: Conant and Coats Thread Mill, Pawtucket RI



*Source: The Providence Journal*¹¹⁶

The Thread Factory has not yet been fully redeveloped, but the vision they have adopted from the start is relevant to this project. The key element in this live/work model is an organic and interesting mixing of uses that creates an exciting and active campus. Essentially, the idea is to find a way to build residential units on campus for people who may work in small-scale manufacturing or any other use on campus and the mixing of uses will add value both ways. The

¹¹⁵ Thread Factory Development Plan.

¹¹⁶ Malinowski, Zachary. “Students to unveil plans to retool vacant mills in Pawtucket, Central Falls”. The Providence Journal. Published March 10, 2014. <http://www.providencejournal.com/breaking-news/content/20140310-students-to-unveil-plans-to-retool-vacant-mills-in-pawtucket-central-falls.ece> Accessed March, 2014.

opportunity exists to create a real synergy on the mill campus by mixing traditional and creative uses with residential options.

VI. Transferability

This research has allowed the researcher to learn about how historic mill structures can be successfully redeveloped for creative uses. The evaluation of these four specific uses makes evident that there are a multitude of adaptive reuse options for any given mill. The findings detailed in these case studies tends to contradict the findings put forward by Briggs, which suggest that certain locational and situational factors must be present in order for a mill to be a good candidate for redevelopment.¹¹⁷ One example of a successful redevelopment that is in direct conflict with Briggs' locational theory findings is the Saxapahaw Mill redevelopment. This mill is located in rural Alamance County on the banks of the Haw River, where it spun cotton into yarn for 150 years before getting closed down in 1994. In 2005, the mill was renovated and redeveloped into residential and commercial space dubbed the "Saxapahaw Rivermill." Within the Rivermill are two casual restaurants, the Saxapahaw Artists Gallery, the Haw River Canoe & Kayak Co., a farmer's market, and the just-opened music hall, the Haw River Ballroom.¹¹⁸ Despite the fact that the town of Saxapahaw has fewer than 1,700 residents¹¹⁹ and is located miles from the nearest city, the Saxapahaw Rivermill is a wildly successful

¹¹⁷ Justin M Briggs, 2010.

¹¹⁸ Diane Daniel. "The Impulsive Traveler: Magical happenings in tiny Saxapahaw, N.C." The Washington Post. June 2011. http://www.washingtonpost.com/lifestyle/travel/the-impulsive-traveler-magical-happenings-in-tiny-saxapahaw-nc/2011/06/10/AGGsqkYH_story.html. Accessed March 2014.

¹¹⁹ U.S. Census Data. Accessed March 2014.

redevelopment that attracts thousands of visitors each year.¹²⁰ Hopefully this research demonstrates that the possible range of redevelopment uses is wide and could be applicable to mills with varying locational characteristics.

Because these structures are such a large part of North Carolina's history, the rehabilitation of these structures allows them to become a social symbol and an economic catalyst in the community once again. Creative adaptive reuse projects allow for preservation of both structure and of industrial legacy, which allows the community to identify with and appreciate the mill building. Because of these wide-ranging impacts, it is crucial for professionals in the field of preservation and redevelopment to understand the concept of use-legacy and to redevelop these structures in a way that is cognizant of the industrial legacy and maintains the historic character that make these structures so worthy of preserving. Developers can take the evaluation of creative uses put forth in this research and see that it is possible and desirable to incorporate such elements of historical character into the new use.

Although the analysis conducted here focused on some of the largest or most successful mill redevelopment projects, it is also important to discuss the challenges facing the field of rehabilitation in general. Although the historic mill rehabilitation tax credits have shown to have a great economic impact at the State and Community level, the program is not without criticisms. The primary criticism of the program is that becoming a qualified rehabilitation project is a lengthy and cumbersome process.¹²¹ Developers must be willing to comply with the preservation standards set forth by the Secretary of the Interior, and with all subsequent requirements of the

¹²⁰ Williams, Ingrid. "Saxapahaw, N.C., Middle of Somewhere, Becomes a Draw". The New York Times. January 2012. http://www.nytimes.com/2012/01/22/travel/saxapahaw-nc-middle-of-somewhere-becomes-a-draw.html?_r=0. Accessed March 2014.

¹²¹ Megan Klem, North Carolina Mill Rehabilitation: An Analysis of Historic Building Character and Design Strategies, 2012.

National Park Service. Additionally, the preservation tax credits are very vulnerable to political climate and run the risk of sunseting without constant renewal in the legislature. The tax credit investors also must comply with a lengthy set of requirements to invest in the project, and will likely withhold investment as a precaution due to certain legislation changes or IRS rulings.

Another challenge presented in these findings is the relatively high number of redeveloped mills located in or near urban communities rather than rural communities. Although the mill rehabilitation tax credit attempts to even the playing field by offering a higher tax credit rate for mill projects located in a Tier 1 or Tier 2 county (rural, economically depressed), the incidence of mill redevelopment occurs disproportionately in urban communities. This finding tends to support Briggs' concept of the influence of situational characteristics on the likelihood of a successful mill redevelopment. Briggs' claims that repurposed mills tend to be found in areas with "relatively young, affluent, and well-educated populations",¹²² a description that seems to match more with an urban population than with a rural one. Secondly, Briggs' model suggests that the mills with the strongest potential for redevelopment mimic the geographical profiles to those mills that have already been redeveloped.¹²³ The fact that a majority of creative mill redevelopments have occurred in urban places similar to one another supports his hypothesis in general, although it cannot speak to the overall effectiveness of his mathematical algorithm.

Lastly, a major challenge to the entire field of mill redevelopment, and redevelopment in general, is the fact that historic preservation, heritage preservation, and good urban design do not always work toward the same goals.¹²⁴ For the most part, historic preservation laws and

¹²² Justin M Briggs, *Locational Aspects of Adaptive Reuse: The case of North Carolina's Textile Mills*. East Carolina University Department of Geography. June 2010. 77

¹²³ Justin M Briggs, *Locational Aspects of Adaptive Reuse: The case of North Carolina's Textile Mills*. East Carolina University Department of Geography. June 2010. 77

¹²⁴ Hay, Duncan. 21.

guidelines promote the documentation of historic structures. Oftentimes the end game of a historic preservation project is curatorial in nature, and we end up viewing these structures as static relics of the past. Heritage preservation works to preserve the legacy of the industries that shaped our communities and to keep some semblance of this history alive in the buildings as they exist now.¹²⁵ And introducing yet another perspective, urban design and local government planning agencies often see these structures as just one small part of a larger urban plan, and as such often cannot devote the appropriate level of analysis into their redevelopment. Regardless of the approach, it is imperative to thoughtfully consider the redevelopment of these historic mills as the center piece of the community and its history. In the redevelopment of mills, it is not always necessary to sacrifice the heritage to save the building.

¹²⁵ Hay, Duncan. 16

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